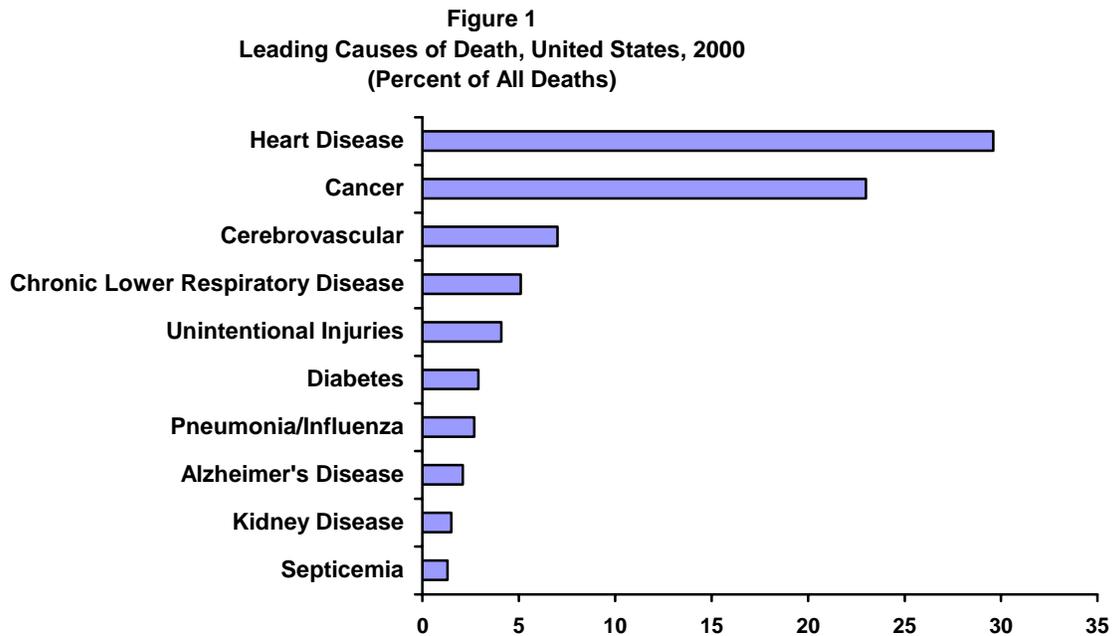


## Virginia State Board of Health Chronic Disease Prevention and Control Position Paper

Chronic diseases - such as heart disease, stroke, cancer, and diabetes - are the leading causes of death and disability in the United States. These diseases account for seven of every ten deaths and affect the quality of life of 125 million Americans.<sup>1</sup> Although chronic diseases are among the most common and costly health problems, they are also among the most preventable. Adopting healthy behaviors such as eating nutritious foods, being physically active, and avoiding tobacco use can prevent or control many of the devastating effects of these diseases. The medical care costs of people with chronic diseases account for more than 75 percent of the nation's \$1.4 trillion medical care costs.<sup>2</sup> Given the severe consequences that chronic disease poses for Virginia's economy and to the quality of life of its residents, the Commonwealth cannot afford to ignore the urgency of seeking new avenues to address these ominous trends. This document will serve as both an information resource and a guide for planning the Board of Health's future activities focused on more effectively promoting the benefits of prevention and the uniform institution of best practices in the care of patients with chronic disease.

### The Burden of Chronic Disease - Prevalence and Incidence

Chronic diseases, particularly heart disease and cancer, are the leading causes of death in the United States (Figure 1). However, most chronic diseases can be managed more effectively with less serious consequences if they are detected early. Greater utilization of preventive services, such as regular physical examinations that include screening tests



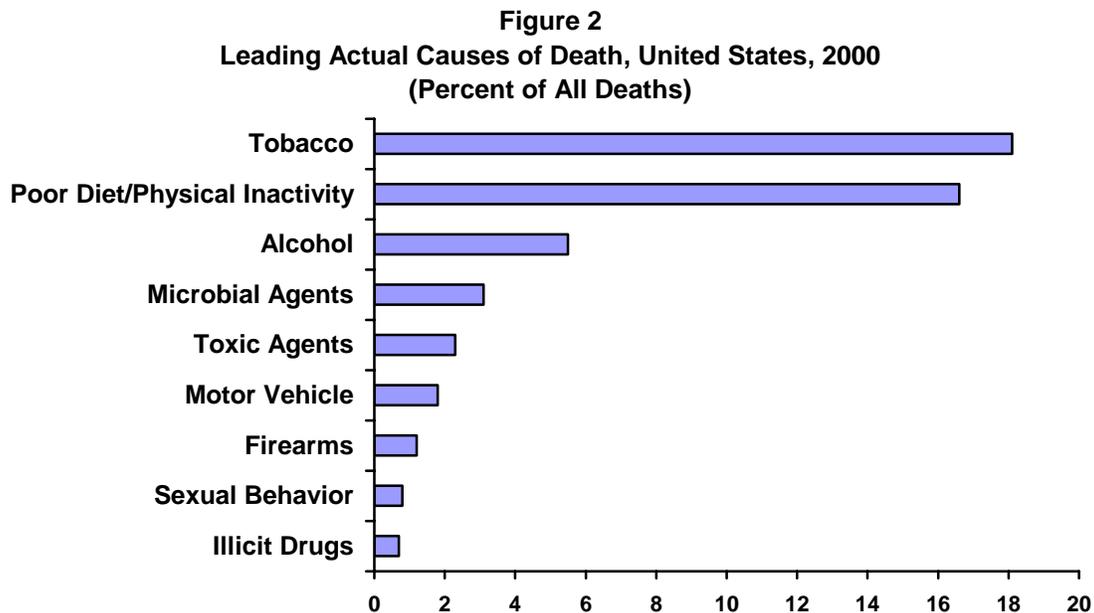
Source: National Vital Statistics Reports 2002; 50(15):1-120; Mokdad AH, Marks JS, Gerberding JL. Actual Causes of Death in the United States, 2000. JAMA. 2004; 291(10):1238-1246.

that promote early detection, would facilitate improved public health. Making better use of these preventive measures and adopting a healthier lifestyle is critical to improving the health of Virginians.<sup>3</sup>

While there are numerous chronic diseases, they share many of the same causative factors. These factors, which can contribute to developing a chronic disease or making an existing condition worse include:

- Use of tobacco products,
- Physical inactivity,
- Poor nutrition,
- Failure to use screening methods,
- Improper care of an existing health condition, and
- Age, gender, and race.

Smoking and other tobacco use was the leading actual cause of death in the United States during 2000, being responsible for approximately 17 percent of all deaths<sup>4</sup> (Figure 2). Smoking remains the leading cause of preventable death and has negative impacts on people at all stages of life. It harms unborn babies, infants, children, adolescents, adults, and seniors. Tobacco-related disease is the number one cause of death to Virginians totaling over 9,100 deaths annually, killing more people than AIDS, alcohol, car accidents, fires, illegal drugs, murders, and suicides combined.<sup>5</sup> If current smoking patterns in the U.S. persist, an estimated 6.4 million of today's children will die prematurely of tobacco-related diseases.<sup>6</sup>



Source: National Vital Statistics Reports 2002; 50(15):1-120; Mokdad AH, Marks JS, Gerberding JL. Actual Causes of Death in the United States, 2000. JAMA. 2004; 291(10):1238-1246.

Poor diet and inadequate physical activity, which often lead to obesity, was responsible for about 16 percent of all deaths in the U.S. in 2000 – making it the second leading actual cause of death<sup>7</sup> (Figure 2). There are numerous examples of poor nutrition. For example, more than 60 percent of young people in the U.S. consume too much fat.<sup>8</sup> During 2003, 74 percent of Virginians consumed less than the recommended five daily servings of fruits and vegetables.<sup>9</sup> Similarly, 73 percent of Virginians reported either not getting the recommended 30 minutes of physical activity five days per week, or not getting any physical activity at all.<sup>10</sup> As a result of factors such as these, obesity is truly an epidemic. Obesity is a leading risk factor for several chronic diseases, including cardiovascular disease, diabetes, hypertension, and arthritis. Over the past ten years, national obesity rates among adults have increased by 60 percent. Since 1980, national obesity rates have doubled among children and tripled among adolescents.<sup>11</sup> In Virginia, 24 percent of adults were obese in 2002 while 35 percent were overweight.<sup>12</sup> In 2004, 19 percent of children ages 2-5 who participated in Virginia's Special Supplemental Nutrition Program for Women, Infants and Children (WIC) program were either overweight or at risk for overweight.<sup>13</sup> The future disease burden as represented by these facts has personal and financial consequences that need to be considered now rather than later.

*Cardiovascular Disease.* Cardiovascular disease (CVD) is commonly associated with older Americans, but one in every six people who die from CVD is under age 65. Heart disease and stroke – the principal components of CVD – are the first and third leading causes of death in the U.S., accounting for more than 40 percent of all deaths.<sup>14</sup> About 950,000 Americans die of CVD each year, with blacks disproportionately affected, and nearly 25 percent of the population lives with CVD. Almost six million hospitalizations each year are due to CVD. During 2002, CVD caused 20,126 deaths in Virginia, 35 percent of all deaths in the state. Of those deaths, 14,881 were due to heart disease and 3,938 due to stroke. Also during 2002, there were 126,682 hospital admissions in Virginia where CVD was a primary diagnosis.<sup>15</sup>

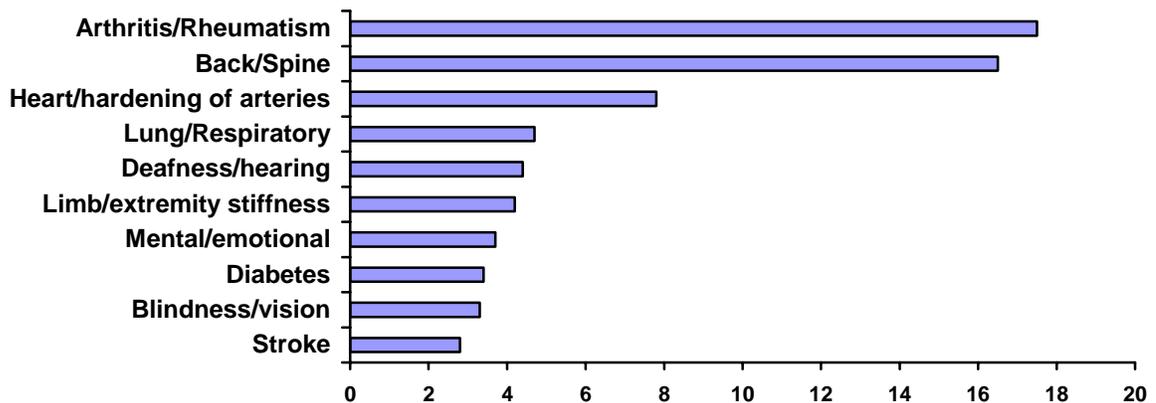
*Cancer.* The total mortality rate for cancer in the United States has been declining over the past decade but has remained constant in Virginia. Cancer has been the second leading cause of death in Virginia since 1950.<sup>16</sup> Approximately 65,000 Virginians died of cancer from 1997-2001. Thousands more Virginians are at increased risk for developing cancer due to unhealthy behaviors. About one-third of cancer deaths are related to nutrition, physical inactivity, obesity, or other lifestyle factors.<sup>17</sup>

*Diabetes.* The percentage of adult Virginians with diabetes increased during the 1990s and by 2003 an estimated six percent of adult Virginians had the disease. Nationally, the number of new cases of diagnosed diabetes increased from 878,000 to 1,291,000 (a 47 percent increase) from 1997 to 2002.<sup>18</sup> In the U.S., diagnosed diabetes is projected to double by 2050.<sup>19</sup> More children are developing type 2 diabetes (one of every 400-500 children) making it one of the most common chronic disease among children. The longer people have diabetes, the greater the risk of developing complications such as cardiovascular disease, lower extremity amputations, blindness, and kidney disease leading to dialysis. Persons with diabetes are nearly eight times more likely than those without diabetes to be hospitalized for a major cardiovascular disease. Diabetes mortality rates are higher among blacks than whites in every age group.<sup>20</sup>

*Hypertension.* An estimated 25 percent of Virginia adults have hypertension, which increases the risk of stroke, heart attack, kidney failure, and congestive heart failure.<sup>21</sup> Nationally, the percentage of adults with hypertension increased during the 1990s. At the national level, nearly 70 percent of individuals with hypertension do not have their condition under control.<sup>22</sup> In Virginia, hypertension is more prevalent among blacks than among whites, and more prevalent among those with less than a high school education than among individuals with a college education.<sup>23</sup>

*Arthritis.* Approximately 25 percent of adult Virginians have arthritis. Arthritis is the leading cause of disability in Virginia and the U.S.<sup>24</sup> (Figure 3). Nearly two-thirds of people with arthritis are younger than 65 years. Nationally, the number of hospitalized days due to arthritis exceeds 72,000 – the equivalent of almost 200 years. Approximately 85 percent of total hip replacements and over 90 percent of knee, shoulder, and ankle replacements are due to complications of arthritis.<sup>25</sup> By 2020, an estimated 12 million Americans will be limited in daily activities because of arthritis.<sup>26</sup>

**Figure 3**  
**Most Common Causes of Disability Among U.S. Adults, 1999**  
**(Percent of All Disabilities)**



Source: U.S. Centers for Disease Control and Prevention, *Morbidity and Mortality Weekly Report* 2001: 50:120-5.

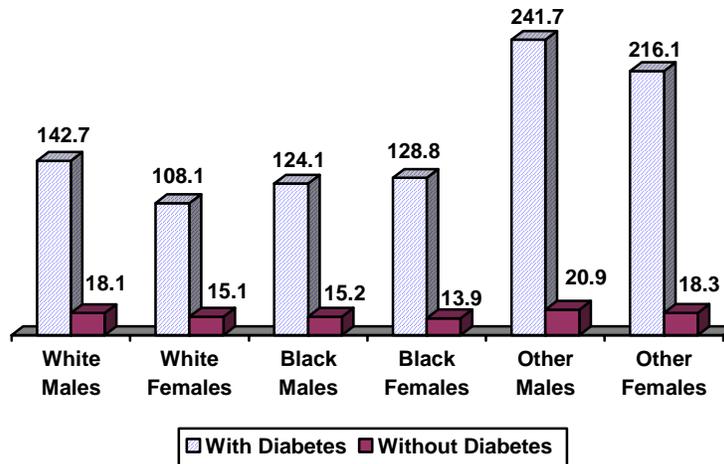
*Asthma.* An estimated 25 million Americans have asthma, more than one-third of whom are children.<sup>27</sup> Nationally, asthma is the leading cause of school absenteeism attributed to chronic conditions as 14.5 million days of school are missed annually due to asthma-related conditions.<sup>28</sup> It is the leading cause of hospitalization for children under the age of 15 in the U.S., with the rate of hospitalization for blacks substantially higher than that for whites.<sup>29</sup>

The Burden of Chronic Disease – Economic Impact

Individuals with chronic illnesses now comprise the national healthcare system’s largest, most expensive, and fastest growing service group. Persons with functional limitations or mental impairments that last at least one year are estimated to account for a full 75 percent of all healthcare spending.<sup>30</sup> Some indicators of the economic impact of chronic disease are as follows:

- In 2003 heart disease and stroke cost the U.S. \$351 billion - \$209 billion for health care expenditures and \$142 billion for lost productivity from death and disability.<sup>31</sup> In Virginia during 2002, the total charge for CVD admissions was over \$2.5 billion, averaging \$19,734 per admission. Over the next five years, if Virginia hospital admissions for CVD were reduced by just five percent the savings in 2007 dollars would be approximately \$750 million.<sup>32</sup>
- Cancer cost the U.S. \$189.5 billion in 2003, \$64 billion in direct medical costs and \$125 billion in lost productivity.<sup>33</sup> In Virginia during 2002, there were 27,344 cancer hospitalizations, generating charges totaling \$670 million, or \$24,500 per admission.<sup>34</sup>
- The direct and indirect costs of diabetes are nearly \$132 billion a year; the average medical expenditures for a person with diabetes were \$13,243, or 2.4 times greater than the cost for a person without diabetes.<sup>35</sup> In Virginia during 2002, there were 11,654 diabetes hospitalizations, generating charges totaling \$154 million, or \$13,200 per admission.<sup>36</sup>
- Virginia hospitalization rates for major cardiovascular disease are substantially higher, regardless of an individual’s sex or race, for diabetics than for non-diabetics (Figure 4).

**Figure 4**  
**Virginia Hospitalization Rates Due to Major Cardiovascular Disease**



Note: Rate per 1000 population  
 Source: Diabetes in Virginia, 2002, Virginia Department of Health.

- Each year, arthritis results in estimated medical care costs of more than \$22 billion, and estimated total costs (medical care and lost productivity) of almost \$82 billion.<sup>37</sup>
- The direct medical expenditures attributable to smoking exceed \$75 billion annually in the U.S., with an additional \$80 billion per year in lost productivity.<sup>38</sup>
- An economic assessment found that a health care plan's annual cost of covering treatment to help people quit smoking ranged from \$0.89 to \$4.92 per smoker, whereas the annual cost of treating smoking-related illnesses ranged from \$6 to \$33 per smoker.<sup>39</sup>

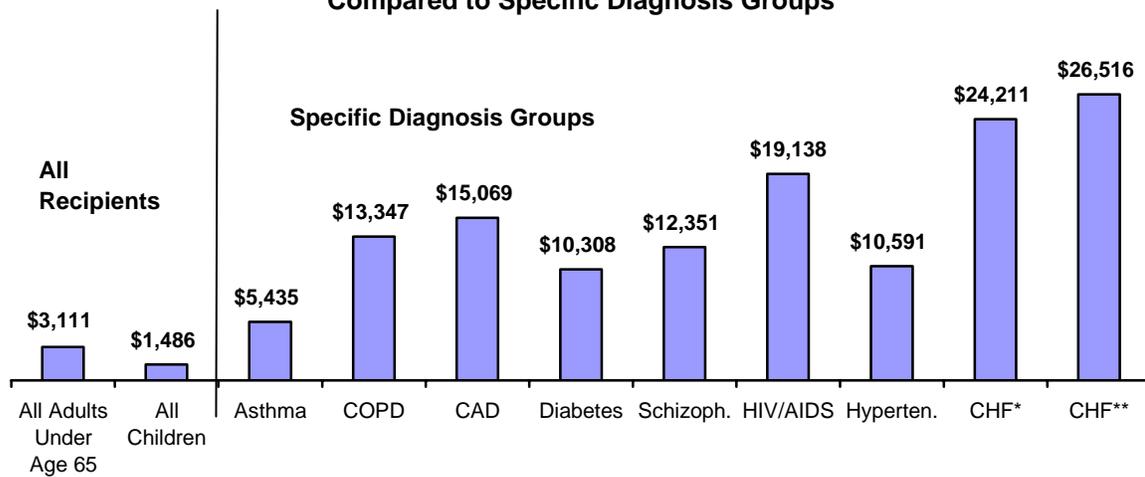
The economic impact of asthma on school-age children, families, and society is immense. Direct medical expenditures for asthma exceed \$1 billion (\$401 per child with asthma), including payments for prescribed medicine, hospital inpatient stay, hospital outpatient care, emergency room visits, and office based visits. Asthma accounts for 6.3 million school absence days per year (2.48 days per child with asthma.) Parents' annual loss of productivity from asthma-related school absence days has been estimated to be \$719.1 million (\$285 per child with asthma).<sup>40</sup>

Nationally, treatment of illnesses related to obesity costs the United States \$93 billion a year (9.1 percent of all healthcare spending), rivaling the financial toll of smoking-related disease. That figure does not include the additional \$56 billion in associated indirect costs, bringing the total to about \$149 billion. Health care for obese individuals costs an average of 37 percent more than for people of normal weight, adding an average of \$732 to the annual medical bills of every American.<sup>41</sup>

The impact of chronic disease is not limited to the private health care sector; it also affects publicly funded health care. The Virginia Medicaid program provides a specific example of the financial burden created by chronic disease. The annual costs of treating Medicaid recipients who have Chronic Obstructive Pulmonary Disease (COPD), Coronary Artery Disease (CAD), Diabetes, HIV/AIDS, Hypertension, Congestive Heart Failure (CHF), and Schizophrenia ranges from a low of \$10,000 per recipient to a high of more than \$26,000. This level of annual expense compares to approximately \$1,500 per year for the treatment of children and \$3,100 per year for adults under the age of 65 in the Medicaid program as a whole<sup>42</sup> (Figure 5).

Chronic disease poses a disproportionate burden to the federal Medicare program. For example, about 14 percent of Medicare beneficiaries have CHF, but they account for 43 percent of Medicare spending. About 18 percent of Medicare beneficiaries have diabetes, yet they account for 32 percent of Medicare spending.<sup>43</sup>

**Figure 5**  
**Average Medicaid Expenditures Per Recipient - All Adults and Children**  
**Compared to Specific Diagnosis Groups**



**Note:** Schizop. – Schizophrenia; Hyperten. – Hypertension; CHF\* - Congestive Heart Failure with diagnosis; CHF\*\* - Congestive Heart Failure without diagnosis.

**Source:** Department of Medical Assistance Services, FY2003

### Best Practices

Vigorous and sustained public health efforts are necessary to have a measurable impact on preventing or delaying chronic disease and associated disabilities. For example, a key strategy for reducing risk factors for cardiovascular disease is to educate the public and health care practitioners about the importance of prevention.<sup>44</sup> Research and evaluation has demonstrated that a wide range of preventive activities can reduce the health and economic burden of chronic disease:

- Treatment to better control blood pressure can reduce heart disease and stroke by 33-50 percent.<sup>45</sup>
- Treatment to better control blood pressure can reduce diabetes-related kidney failure by 33 percent.<sup>46</sup>
- Regular eye exams and timely treatment could prevent up to 90 percent of diabetes-related blindnesses; however only 64 percent of diabetics received annual dilated eye exams in 2002.<sup>47</sup>
- Outpatient training to help people self-manage their diabetes prevents hospitalizations. Every \$1 invested in such training can cut health care costs by up to \$8.76.<sup>48</sup>
- Preconception care for women with diabetes leads to healthier mothers and babies. Every \$1 invested in such care can reduce health costs by up to \$5.19 by preventing costly complications.<sup>49</sup>

- Early detection could substantially reduce the billions of dollars spent on cancer treatment each year. Screening for colorectal cancer can reduce the number of people who die from this disease by at least 30 percent; yet 60 percent of Americans over age 65 have not had a sigmoidoscopy or colonoscopy in the past five years even though Medicare covers the cost.<sup>50</sup> A mammogram every 1-2 years can reduce the risk of breast cancer death by 16 percent for women age 40 and older.<sup>51</sup>
- Stroke risk is reduced to that of a person who never smoked after five to 15 years of not smoking; cancers of the mouth, throat, and esophagus risks are halved five years after quitting; coronary heart disease risk is cut by half one year after quitting and is nearly the same as someone who never smoked 15 years after quitting; chronic obstructive pulmonary disease risk of death is reduced after you quit; lung cancer risk drops by as much as half 10 years after quitting.<sup>52</sup>
- A recent study estimated that an insurer or health care organization that implements an arthritis self-help course among just 10,000 people with arthritis can expect net savings of more than \$2.5 million over four years. Physician visits were reduced by 40 percent. However, less than one percent of Americans with arthritis currently participate in such courses, which teach people how to manage their arthritis and lessen its effects.<sup>53</sup>
- A ten percent weight loss will reduce an overweight person's lifetime medical costs by \$2,200 - \$5,300.<sup>54</sup>
- Increased physical activity for overweight patients reduces many of the illnesses associated with obesity, helps maintain weight loss, and helps prevent weight gain. If ten percent of adults began a regular walking program, \$5.6 billion in heart disease costs could be saved.<sup>55</sup>
- Estimates suggest that \$8 million per year could be saved for every 1 percent increase in the proportion of the adult population that is sufficiently active.<sup>56</sup>
- Increasing fruit and vegetable consumption by one serving a day per person would result in direct health care savings of \$180 million per year.<sup>57</sup>
- Among overweight Americans with pre-diabetes, modest lifestyle changes reduced diabetes incidence by 58 percent. Lifestyle changes included weight loss of 5-7 percent of body weight, 150 minutes of physical activity per week and a lower fat diet. These lifestyle interventions worked equally well in men and women and in all ethnic groups. These interventions were most effective in people age 60 and over, who lowered their risk of developing diabetes by 71 percent.<sup>58</sup>

Australia has led the world in some prevention initiatives, reducing mortality, morbidity, and health costs. Some successful programs within the past 30 years have:

- Reduced tobacco consumption at a cost of \$176 million – but saved at least \$500 million and created benefits worth \$8.4 billion;
- Reduced coronary heart disease at a cost of \$810 million – but created benefits worth \$9.3 billion; and
- Changed behaviors to limit the spread of HIV/AIDS at a cost of \$607 million, but created benefits worth \$2.5 billion.<sup>59</sup>

Among public health's roles is to showcase prevention opportunities, to promote their development, to educate the public and policy makers about the benefits of these policies and programs, and to advocate for their widespread application. Among adults who may be seeing early signs of chronic disease, strategies should focus on 1) promoting healthier choices to slow the progress of disease, to reverse it where possible, and to prevent the development of complications, 2) encouraging the use of screening and early diagnosis that can lead to a cure or the delay of complications, and 3) education of self-management of chronic diseases to improve control and reduce complications. Since risky behaviors are often established during childhood and adolescence, public health is driven also toward interventions aimed at promoting healthy behavioral choices among young people so that they may carry them into adulthood.<sup>60</sup>

*Joint Committee of the Board of Health and Board of Education.* The Joint Committee, established during 2004 in response to concerns about increases in childhood obesity rates, examined a wide range of issues pertaining to nutrition and physical fitness levels of Virginia students in grades kindergarten-12. The Joint Committee believed that improvements in the nutritional environment within schools and by the physical activity levels of students can create significant long term improvements in health status and educational achievement, and reductions in health care expenditures.

The Joint Committee developed recommendations pertaining to the following:

- Nutrition and physical education curriculum,
- State guidelines for development of nutrition and physical activity policies by local school divisions,
- Mechanism for state level evaluations and technical assistance, and
- Continuing collaboration between the Department of Health and the Department of Education concerning the health of the school age population.<sup>61</sup>

The Board of Health believes that the Joint Committee can serve as a model for collaborative efforts with other state agencies and governing boards to address additional issues related to chronic disease prevention and control.

### Public Policy Goals and Objectives

The goal of the State Board of Health's strategic initiative is to reduce the occurrence of chronic disease in Virginia while also mediating its impact. The State Board of Health supports a multi-pronged and well-coordinated effort employing the resources of subject matter experts, the public sector (state and local government) and the private sector in the

institution and promotion of best practices in the prevention and the management of chronic disease. In most instances these efforts will simply follow a path of better coordination of existing knowledge being applied more effectively at ground level. The State Board of Health views this effort as supportive of, and a natural extension to, Governor Warner's Healthy Virginians Initiative.

The State Board of Health supports programs and policies that promote healthy behaviors, avoidance of known risk factors such as tobacco use, poor nutrition, and physical inactivity, and the evidence-based management of chronic diseases. Priorities should be established in areas where the science is mature enough to offer reasonable hope of success when broadly applied; where the burden of disease is great; and, especially, where disparities across populations are cause for great concern.

To accomplish this goal, the State Board of Health will:

- Be the unifying voice for the prevention and control of chronic diseases in Virginia.
- Establish the burden associated with chronic diseases and frame the problem to be addressed.
- Establish strong working relationships with other governmental agencies and governing boards, and with nongovernmental lay and professional groups.
- Foster the development of public/private partnerships that will facilitate improved prevention and control of chronic disease.
- Encourage the creation of financial and non-financial incentives and disincentives that will spur progress in chronic disease prevention and control efforts.
- Use data and work with partners to develop comprehensive state plans to guide program efforts that emphasize quality of care, prevention measures and improved outcomes.
- Focus on specific targets for change (population segments, organizations or environments), choose the best channels to effect such changes, and select appropriate strategies for doing so.
- Establish systematic approaches for determining whether Virginia's comprehensive chronic disease program's objectives are being achieved – to improve the health and quality of life of Virginians.
- Support the National Chronic Disease Prevention Agenda established by the U.S. Centers for Disease Control and Prevention which includes:
  - ◆ Promoting health and wellness programs as schools and work sites and in faith-based and community-based settings,
  - ◆ Enacting policies that promote healthy environments,

- ◆ Ensuring access to a full range of quality health services,
- ◆ Implementing programs that focus on eliminating racial, ethnic and socioeconomic based health disparities, and
- ◆ Educating the public effectively about their health.<sup>62</sup>

### Next Steps

As an initial step, the Board of Health will develop a set of consistent, simple public health messages that underscore what individuals can do to prevent or delay the onset of various chronic diseases. Individual Board members will meet with representatives of their constituent organizations in order to raise the level of awareness of, and increase public support for, public health efforts to prevent and control chronic disease.

The Board will seek to establish public/private partnerships to further the accomplishment of its objectives. The Board will work with health care provider organizations, other stakeholder groups including public health and managed care organizations, state agencies and governing boards, as well as the General Assembly. In doing so, the Board will focus on encouraging the development of financial and non-financial incentives and disincentives for chronic disease prevention and control.

Subsequently, the Board will work with other stakeholders to deliver education and outreach activities, including site visits, to make the public health and economic case for chronic disease prevention and control efforts. There are a number of potential options for education and outreach activities. For example, outreach can be approached through early prevention and intervention with children. A focus could be placed on school health activities by working with the Department of Education. Another approach could be to target worksites in order to reach the adult population. This type of approach could help influence policy and environmental decisions, and would promote healthy aging. Older adults could also be targeted in collaboration with the Department for the Aging and the Commonwealth Council on Aging. Yet another approach could be to focus on an underserved population (i.e., Medicaid recipients) in collaboration with the Department of Medical Assistance Services and the Virginia Primary Care Association. Similarly, the Board will seek to utilize the print and broadcast media in order to publicize the need for improved chronic disease prevention and control efforts. Wherever possible, the Board will seek to utilize supporting information developed as part of Governor Warner's Healthy Virginians Initiative.

Longer term goals for the Board include:

- Establishment of a chronic disease prevention plan which allows VDH to be proactive in addressing chronic disease needs and issues;
- Establishment of chronic disease prevention projects in Virginia localities, in collaboration with public, private and non-profit partners, which are responsive to community needs, changes in public health administration and the managed care environment; and

- Development of and advocacy for public policy proposals, including legislative, regulatory and budgetary initiatives that would support improved chronic disease prevention and control in Virginia.

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